The Journal

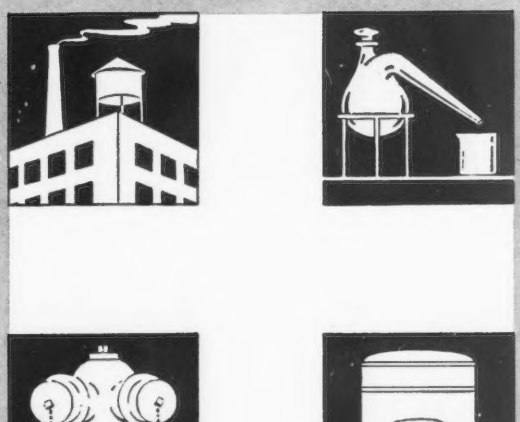
OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS

SPECIAL ISSUE

TODAY'S SAFETY ENGINEER in Industry, Business and Government

by E. Peter Marconi

REPORT OF THE SOCIETY'S SPECIAL COMMITTEE ON MEMBERSHIP SERVICES



AUGUST, 1960
Volume V Number 3

November Issue To Present Unusual Group of Articles

■ OUR USUAL *Journal* practice of featuring discussions on accident control techniques has been interrupted, for this issue, to present the report of a special survey on the professional position of today's safety engineer—certainly a most important contribution to career information in this field.

However, with our next *Journal* issue in November we plan to return to "normal" with a schedule of three varied and interesting articles.

Philip J. Bailey, appearing as a *Journal* author for the third time, will tell of his experiences in lecturing, early this year, to an industrial safety study team of 11 Yugoslavians who visited the United States from their nonsatellite but Communist homeland.

In a technical article, W. W. Allison will discuss "Safe Use of Rupture Discs" and the effects of temperature on the rupture pressure, a subject on which little published material is available.

A most unusual article on "Appraising Safety Effectiveness" by Dr. John V. Grimaldi, another author whose work has been published in two previous *Journal* issues, will report on a study which relates cost accounting data to safety performance and provides a yardstick for predicting safety experience.

—Editor

AMERICAN SOCIETY OF SAFETY ENGINEERS

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OUR PRESIDENT SPEAKS ON SAFETY

A MOST IMPORTANT function of any professional society is informing its membership on matters of significant interest to the profession. In keeping with this philosophy, this entire *Journal* issue is being devoted to publication of a recently completed study and analysis of the organizational status of the professional safety man as reflected by our Society membership.

This report, covering the results of a questionnaire survey of the membership, has been prepared by the Society's Special Committee on Membership Services, which also conducted the survey. More than two years of extensive, intensive and dedicated committee effort has gone into this project in order that we might take a really objective look at the position we occupy and the functions we perform, professionally, in modern industry, business and government.

This is the second such study made by our Society. The first survey, in 1953, was cosponsored for general release by the American Management Association. This effort brought into focus many pertinent facts about our operations and had a marked effect in improving the status of our members and giving wider professional recognition to our Society.

It is my feeling that this current study has even greater significance; it embraces a much wider area of response and the data presented are in greater detail and consequently more meaningful. I believe the report presented on the following pages represents a major step forward in understanding the Society member. It also shows, when compared with the 1953 study, that as the safety profession has grown in dimension its members likewise have expanded their responsibilities and areas of service. This in itself is evidence of improved professional stature and wider acceptance of the importance of our function.

An activity such as this survey is indicative of the desire of your national officers and Executive Committee to give tangible services to the Society membership—services which are vital to true professional growth. By taking a critical look, every few years, at who we are, what we are and where we are, we can learn more about "ourselves," can better insure our individual interests and can plan more objectively for future development and additional services to our members.

Through the broad dissemination of this type of information, we can promote more aggressively a sound expansion and growth for our Society as the true vehicle of expression and representation for the safety professional. Making the information in this report available reflects our determination to uphold our ideals firmly and to maintain an integrity of spirit and unity of purpose which strengthens our cause and dignifies our position as professionals.

John F. Jones

JOHN F. JONES, PRESIDENT
AMERICAN SOCIETY OF SAFETY ENGINEERS

TODAY'S SAFETY ENGINEER

...in Industry, Business and Government

The survey presented here, a project of the Society's national Special Committee on Membership Services, has been conducted under the leadership of E. Peter Marconi, who has been serving as chairman of this special committee since 1955.

The study was initiated in 1957, when the first draft of the proposed questionnaire was written. First and second drafts were reviewed by IBM specialists and Society staff. A third draft was sent to a selected group of 50 Society members. The 32 replies received were used as a basis for changes in two further drafts of the questions, prepared by Chairman Marconi and the then Society president, Henry B. Duffus.

Executive Committee approval of the fifth draft was obtained in early 1958, and the questionnaires were mailed to all Society members in August of that year. Tabulation of the answers was carried out under the supervision of Chairman Marconi, who wrote this Journal report of the findings. Serving as a Board of Review for the report were John F. Jones, Society president; John V. Grimaldi, second vice president; Arthur H. Christian, Eastern Region vice president; Merrill C. M. Pollard, Northeast Region vice persident.

The Special Committee on Membership Services especially thanks Charles S. Wolff, former assistant to the managing director of the Society, for his valuable assistance in all phases of the project.

In addition to Chairman Marconi, committee members during the time this study was being prepared, conducted and tabulated—and their years of service on the committee—are as follows:

William T. Aaron, 1959-60; David F. Abernethy, 1956-59; James B. Austin Jr., 1956-58; Thomas J. Berk, 1957-59; R. C. "Chet" Childress, 1958-60; Gerard O. Griffin, 1956-60; William A. Hartrey, 1959-60; Arthur J. Naquin, 1956-58; Merrill C. M. Pollard, 1956-58; William H. Powers, 1959-60; Karl Schulze, 1956-60; Eugene W. Stuffing, 1958-60.

BY E. PETER MARCONI

ON JULY 8, 1958, a questionnaire was mailed to the 7,242 members of the American Society of Safety Engineers. In order to encourage cooperation, replies were anonymous. (Wording of the questions is shown on the inside back cover of this *Journal* issue, opposite page J-48.)

On September 15, 1958, the closing date for returns, 3,754 replies had been received, a return of 51.8 per cent. This large response supports extrapolation of survey results to the entire Society.

The purpose of the survey was to learn about the background and present status of members. The data obtained would help to guide the Society in serving its members. Individual members would be enabled to make comparisons in the light of national data on activities, title, salary, education and experience.

A survey on similar subject matter, but much more limited in scope, was conducted in 1951 and was published in 1953 in cooperation with the Society for Advancement of Management. Comparisons with results of this earlier study are made in the report below, where appropriate.

Figure 1—Distribution by Membership Classification

MEMBERSHIP CLASSIFICATION	TOTAL SOCIETY MEMBERSHIP*		SURVEY RESPONDENTS		
	COLUMN 1 NUMBER	COLUMN 2 PER CENT	COLUMN 3 NUMBER	COLUMN 4 PER CENT OF CLASSIFICATION	COLUMN 5 PER CENT OF SURVEY TOTAL
Member	3,364	46.5	1,990	59.3	53.0
Associate Member	1,715	23.7	954	55.6	25.4
Junior Member	1,213	16.7	516	42.5	13.7
Affiliate Member	819	11.3	200	24.4	5.3
Life Member	131	1.8	42	32.0	1.1
TOTAL	7,242	100	3,754**	51.8	98.5

*September 15, 1958.
**Includes 52 respondents who did not state their membership classification.

DISTRIBUTION BY MEMBERSHIP CLASSIFICATION

Figure 1 shows that the survey sample is a representative one from the standpoint of distribution by member classification.

In general, the percentage of replies increased with the membership classifications assigned to the more experienced members, as indicated in Column 4. Matching of classification and return was closest in the Associate Member group: 23.7 per cent of the membership, 25.4 per cent of survey replies (Columns 2 and 5).

Persons in the Member classification provided 59.3 per cent of the returns, although comprising 46.5 per cent of the total Society membership.

In the tabulations which follow, both Affiliate and Life Members have been omitted. In 1958 when the questionnaires were completed, Affiliate Members primarily were persons engaged in fields related to accident prevention, such as safety equipment sales. (A later expansion of this membership classification to include beginners in the safety engineering profession is not applicable here, since in 1958 this latter category carried the Junior Member designation.) Life Members are predominantly retired from active work.

DISTRIBUTION BY EMPLOYER GROUP

Figure 2 shows that about one-half of the respondents are employed in industry and about one-fourth in the insurance field. A breakdown of the industry group is given in Figure 3.

Figure 2 — Distribution by Employer Group

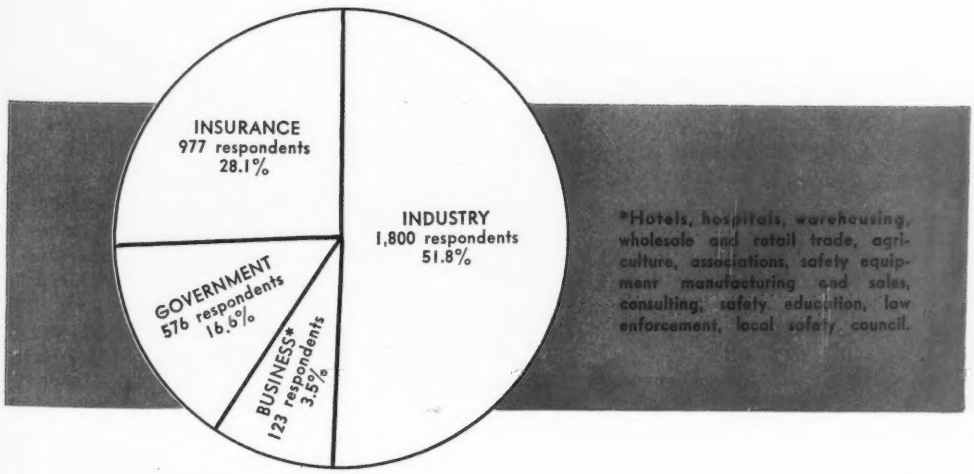


Figure 3—Distribution within Industry Group

Industry	Number of Respondents	Industry	Number of Respondents
Aircraft Development, Manufacturing and Maintenance	73	Rubber Products	31
Automobiles and Automotive Equipment	63	Sheetmetal Products	12
Cement	14	Shipbuilding	8
Chemical	259	Steel	135
Construction	68	Textile	21
Electrical Equipment	91	Wood Products	14
Food	84	Air Transport	7
Iron and Steel Products	31	Railroad	3
Leather	2	Transit	4
Lumber	9	Highway Freight and Warehousing	6
Machinery	48	Marine Transportation	13
Meat Packing	2	Pipeline Transportation	2
Mining—Metal	26	Service Allied to Transportation	16
Mining—Anthracite	1	Telephone, Telegraph, etc.	47
Mining—Bituminous	1	Radio and TV	4
Non-Ferrous Metals and Products	69	Electric Utility	114
Non-Metallic Mining and Quarry	4	Gas Utility	22
Petroleum and Natural Gas	242	Local Utility (Water, Sewage)	13
Printing, Publishing, etc.	3	Not Stated	164
Pulp, Paper and Allied Products	68		
Railroad Equipment	6	Total	1,800

Figure 4—Distribution by Region (Chapters Only)

GEOGRAPHICAL DISTRIBUTION

Figure 4 shows the response by regions.

Thirty-six replies were received from South America, Asia, Europe, Mexico, Central America and Africa. It is not known how many are foreign nationals and how many are U. S. citizens on foreign duty.

Distribution of Society membership and of survey returns, by chapters, are shown in Figure 5. Omitted is the distribution by state of residence of the 555 respondents who are not members of a chapter.

Figure 5—Distribution by Chapter

Chapter	Total Membership	All Respondents*	Per Cent Return	Rank By Per Cent Return
Metropolitan	637	330	51.8	29
Greater Chicago	310	158	51.0	32
Los Angeles	272	137	49.5	36
New Jersey	251	117	46.6	50
Philadelphia	246	115	46.8	46
San Francisco	185	109	59.0	16
Boston	199	108	54.3	21
Western Pennsylvania	234	98	41.8	55
Washington	131	80	61.0	12
Gulf Coast	173	72	41.6	56
Niagara Frontier	148	70	47.3	44
Greater Detroit	99	67	67.6	3
Central New York	108	64	59.2	14
St. Louis	131	66	50.4	34
Northern Ohio	127	65	51.1	31
Milwaukee	103	60	58.2	17
Connecticut Valley	98	59	60.2	13
Tulsa	89	57	64.0	8
Georgia	83	53	63.8	10
Northwest	104	51	49.0	38
Central Ohio	78	50	64.1	7
Kansas City	107	46	43.0	52
New Orleans	82	45	54.9	20
Quebec	102	37	36.3	58
Eastern New York	54	35	64.9	4
McKinley	73	35	48.0	39
Puget Sound	62	32	51.6	30
Genesee Valley	75	32	42.6	54
Ark-La-Tex	61	30	49.2	37
Louisville	65	31	47.7	40
Oklahoma City	63	30	47.6	41
South Texas	45	29	64.5	5
Cincinnati	57	29	50.9	33
Hawaii	60	30	50.0	35
Arkansas	61	29	47.5	42
Permian Basin	47	30	63.9	9
Portland	59	27	45.7	48
North Carolina	42	27	64.3	6
Alabama	50	25	50.0	35
Greater Baton Rouge	43	25	58.1	18
Colorado	44	26	59.1	15
Fort Worth	50	24	48.0	39
Central Illinois	49	23	47.0	45
Great Plains	36	22	61.1	11
Panhandle	31	22	71.0	1
South Carolina	32	22	68.8	2
Sabine-Neches	36	20	55.6	19
Sacramento Valley	37	20	54.1	23
Central Indiana	42	19	45.2	49
Chattanooga Area	35	19	54.2	22
Mohawk Valley	38	20	52.6	26
New Mexico	37	20	54.0	24
West Virginia	46	19	41.3	57
North Florida	35	19	54.3	21
Penn-Jersey	38	18	47.4	43
Western Michigan	34	17	50.0	35
Worcester County	37	17	46.0	47
Wichita	32	17	53.1	25
Delaware County	59	16	27.1	59
Lansing	32	14	43.7	51
Mobile	31	14	45.1	50
Utah	30	15	50.0	35
Corpus Christi	24	13	54.1	23
Memphis	25	13	52.0	28
East Tennessee	25	12	48.0	39
Middle Tennessee	28	12	42.9	53
Spokane	23	12	52.2	27
Southwest	136	9	6.6	60
Total	6,116	3,084		

555 Members-at-Large are omitted.

NOTE: Rhode Island, Colonial Virginia, Central Florida, South Florida and West Florida Chapters were not chartered at the time of this survey. Fifty-one replies show no chapter or state of residence.

*Including Affiliate and Life Members.

NUMBER OF SAFETY ENGINEERS EMPLOYED

An effort was made to determine the ratio of safety engineers employed per 1,000 employes served. Considerable variation was found among the various industries. Differences existed also within an industry, complicating further the presentation of information on this topic.

Based on the 1,106 industry respondents who supplied information on this matter, the average ratio of safety engineers employed per 1,000 employes served is in the order of 1.45. This number should be used with caution, since it is too high for some industrial operations, and too low for others.

In general these data show that as the size of a company increases the ratio of safety engineers gradually decreases. This may reflect the greater effectiveness which accompanies accident prevention work in large companies where, generally speaking, management has a higher degree of awareness of the benefits of accident prevention. Perhaps also it results from the greater efficiency which is likely to occur when a larger staff permits specialization. There is also the benefit which accrues from the total experience of several persons and from better distribution of labor.

Figure 6—Respondents Having Safety Titles

TITLE	INDUSTRY	INSURANCE	GOVERNMENT	BUSINESS	TOTAL	
					No.	%
1. ENGINEER: Safety, Loss Prevention, Safety and Fire Protection, Loss Control	408	437	144	20	1,009	33.9
2. DIRECTOR: Safety, Accident Prevention	478	32	121	14	645	21.7
3. SUPERVISOR: Safety, Accident Prevention, Protection Engineering	351	123	46	7	527	17.7
4. MANAGER: Safety, Accident Prevention, Safety Services, Loss Prevention	103	72	8	10	193	6.5
5. INSPECTOR: Safety, Factory	46	15	71	2	134	4.5
6. SUPERINTENDENT: Safety, Accident Prevention	37	48	23		108	3.6
7. CONSULTANT OR COUNSELOR: Safety	31	23	15	37	106	3.5
8. REPRESENTATIVE: Safety, Accident Prevention, Loss Prevention	14	40	5	1	60	2.1
9. COORDINATOR: Safety	23	0	10	1	34	1.2
10. OFFICER: Safety, Protection, Security	6	0	25	2	33	1.2
11. SPECIALIST: Safety Program, Loss Prevention, Health and Safety, Punch Press	15	6	10	0	31	1.1
12. CHIEF (OR HEAD): Industrial Safety, Safety and Security	5	0	18	0	23	.8
13. TECHNICIAN OR INVESTIGATOR: Safety	1	0	15	0	16	.5
14. ADMINISTRATOR: Safety, Safety Program, Accident Prevention	10	0	4	0	14	.4
15. ADVISER, ANALYST, ASSISTANT INSTRUCTOR; ALL OTHERS: Safety, Protection	14		12	1	27	.9
16. DIRECTOR, SUPERVISOR, MANAGER: Industrial Hygiene	5		3	1	9	.4
TOTAL	1,547	796	530	96	2,969	100

TITLES OF RESPONDENTS

Figures 6 and 7 show that considerable variation exists in the titles of members. Twenty-one nouns (engineer, director, etc.) and fifteen noun modifiers (safety, accident prevention, etc.) were reported.

Respondents have been divided into two groups: (1) those with titles in which the word "safety" or equivalent appears; (2) non-safety titles. The "safety title" constitutes 84.5 per cent of the respondents and the titles of these respondents are listed in Figure 6.

Figure 6 shows that the one most common title is "engineer;" 34 per cent of the safety-titled respondents bear this designation. The various modifiers used in connection with the noun "engineer" are shown in the figure. Note that while the "engineer" title is the most common one overall, it is, among industry respondents, second to the title "director." Among business respondents it is second to the title "consultant" or "counselor."

The first seven titles account for 91.4 per cent of all safety titles.

Figure 7 lists respondents whose titles do not carry the modifier "safety" or equivalent. Here, too, the title "engineer" leads the list. A large variety of modifiers are used, as shown in Figure 7. Note that about 80 per

cent of these engineer titles are held by respondents in the insurance field. Although these insurance employes do not have the "safety" modifier in their titles, it is a generally accepted fact that such persons actually are safety engineers. Accordingly, it would be logical to add these 69 titles to the total in Figure 6 of those who employ the title "engineer." If this is done, it develops that respondents who use the title "engineer," with or without the "safety" modifier, make up 35.4 per cent of *all* survey respondents.

The presence of titles with no apparent connection to safety is of interest. In the case of the 61 having a "personnel" title and the 50 having a "relations" title, it is indicated that these respondents have a responsibility for the direction of the accident prevention program in their companies. This is a reasonable assumption, if we glance at Figure 8, where it can be seen that personnel and industrial relations executives commonly are responsible for accident prevention programs.

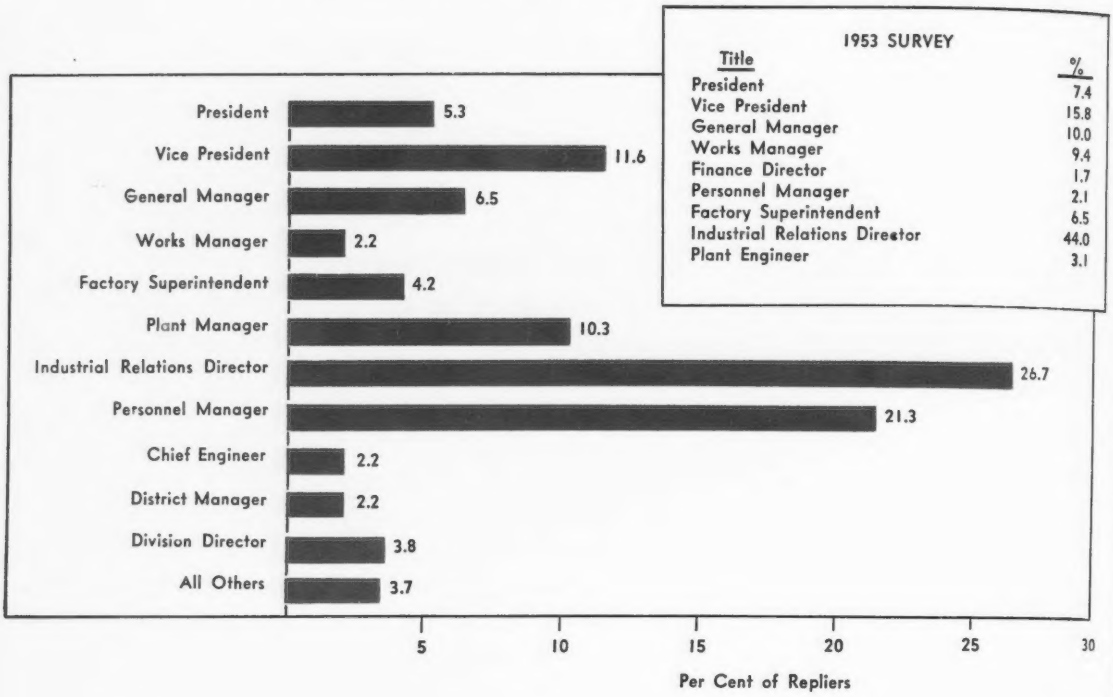
The same assumption probably can be made with regard to the other non-safety-titled respondents. Probably also, some have been promoted from safety-titled positions and retain either a responsibility for the accident prevention program or continue their interest in the Society, even though somewhat separated from direct work in accident prevention.

Figure 7—Respondents Having Non-Safety Titles*

TITLE	INDUSTRY	INSURANCE	GOVERNMENT	BUSINESS	TOTAL	
					No.	%
1. ENGINEER: Field, Insurance, Liability, Auditor, District, General, Officer, Research, Section, Supervising, Chief, Industrial, Plant, Maintenance	10	69	6	1	86	15.9
2. PERSONNEL: Manager, Director, Supervisor, Administrator, Coordinator	59	0	1	1	61	11.2
3. RELATIONS: Labor, Industrial, Employe, Personnel: Director, Vice President, Manager, Superintendent, Supervisor, Coordinator	48	1	0	1	50	9.1
4. MANAGER: Division, Director, District, Operations, Underwriting, District Engineering, Wage and Salary, Associate	18	17	0	9	44	8.2
5. SUPERVISOR: Insurance, Casualty, Employe Service, (no prefix)	14	9	4	0	27	4.9
6. PRESIDENT OR VICE PRESIDENT	7	5	0	10	22	4.1
7. ASSISTANT: Administrative, to Manager, to President, to Director of Insurance, to Superintendent, etc.	11	1	0	2	14	2.5
8. SUPERINTENDENT: General, Plant, Factory, Maintenance	7	1	1	0	9	1.6
9. PLANT PROTECTION: Manager, Supervisor, Director	7	0	0	0	7	1.2
10. DIRECTOR: Division, First-Aid	2	1	2	1	6	1.1
11. ALL OTHERS	26	59	28	29	142	26.3
12. NOT STATED	43	8	4	21	76	13.9
TOTAL	252	171	46	75	544	100

*Titles not specifically identifying the bearer as engaged in safety work. Except for engineers in the insurance business, these respondents probably are not full time professional safety people but have some responsibility for safety.

Figure 8 — Titles of Persons to Whom Respondents Report (Industry Only)



TITLES OF PERSONS TO WHOM RESPONDENTS REPORT

A comparison of Figure 8 with the equivalent chart in the 1953 survey (1951 data) shows considerable similarity. The 1953 survey showed that 44.0 per cent of the respondents reported to the industrial relations director. No reference was made to personnel manager and, consequently, it is assumed that his title was included in the "director" title. The present survey was able to separate these two titles. Together they constitute 48 per cent, remarkably close to the 1953 survey.

Since the 1953 survey covered only 418 respondents, it is probable that the present survey results, which cover a large sample and were completely unselected, are more representative findings.

Figure 8 should be viewed in connection with Figure 9, which shows that the respondent is more likely to report to the president, vice president, general manager, works manager or other top level management officer in companies having less than 1,000 employes. For example, of those who report to the president, 54 per cent are employed in companies having less than 1,000 employes. In the case of plant manager and works manager, this percentage is even higher: 62 per cent in the former case, 66 per cent in the latter.

This finding is of special interest since Figure 10 shows that the average frequency and severity rates are not as satisfactory as might be wished in the case where the respondent reports to the president, vice president, etc. Thirty-five per cent of the industry repliers in Figure 9 are employed in companies having 1,000 or fewer employes.

ORGANIZATIONAL POSITION OF RESPONDENTS AND INJURY RATE

Figure 10 shows that a low injury rate is not guaranteed when the respondent reports to the president or vice president. However, this fact will be misleading unless it is reviewed in the light of the information in Figure 9, which shows that the respondent who reports to the president works predominantly in small companies. Since it is well known that frequency and severity rates often are higher in small companies, it can be inferred that the value of reporting to the top man is somewhat offset by unfavorable factors. For one, the top man has multiple duties and responsibilities and perhaps has not become as thoroughly convinced of the benefits of accident prevention as has his big-company counterpart.

A similar chart in the 1953 survey contains results which are almost diametrically opposed. The reason for this discrepancy can only be surmised. The 1953 survey does not indicate the size of the specific sample on which these particular results were based; however, it is probable that the difference is related to sample size.

Figure 9—Relation of Company Size to Reporting Title (Industry Respondents)*

Reporting Title	Under 200	201-500	501-1,000	1,001-2,000	2,001-4,000	4,001-6,000	6,001-10,000	10,001-15,000	15,001-20,000	20,001-25,000	25,001-35,000	Over 35,000	Total	Not Stated
President	10	10	17	9	6	5	4	2	2	1	0	2	68	1
Vice Pres.	4	28	22	20	23	10	17	6	3	5	5	7	150	0
Gen. Mgr.	4	25	12	11	9	7	8	1	1	0	1	4	83	2
Works Mgr.	8	4	7	6	1	1	2	0	1	0	0	0	30	0
Fact. Supt.	11	13	10	11	5	3	1	0	1	0	0	0	55	2
Plant Mgr.	10	45	32	21	19	5	5	1	0	1	0	1	140	0
Ind. Rel. Dir.	1	28	44	80	81	33	39	20	9	8	10	7	360	4
Pers. Mgr.	3	22	37	69	69	30	17	16	3	3	4	8	281	3
Chief Engr.	1	4	2	3	5	1	2	2	3	1	0	1	25	4
Dist. Mgr.	3	10	6	5	0	1	0	0	1	1	1	0	28	1
Div. Dir.	2	14	9	4	5	2	6	1	1	1	1	1	47	2
All Others	2	6	3	5	6	2	4	2	6	2	1	5	44	0
TOTAL	59	209	201	244	229	100	105	51	31	23	23	36	1,311	19
Not Stated**	10	35	25	29	21	13	14	9	4	6	1	9	176	32

*Title of executive to whom the respondent reports.

**In addition, 271 respondents reporting to a safety title (Safety Director, etc.) are omitted.

Figure 10 — Organizational Position of Respondents and Injury Rate (Industry Group — Safety Titles Only)

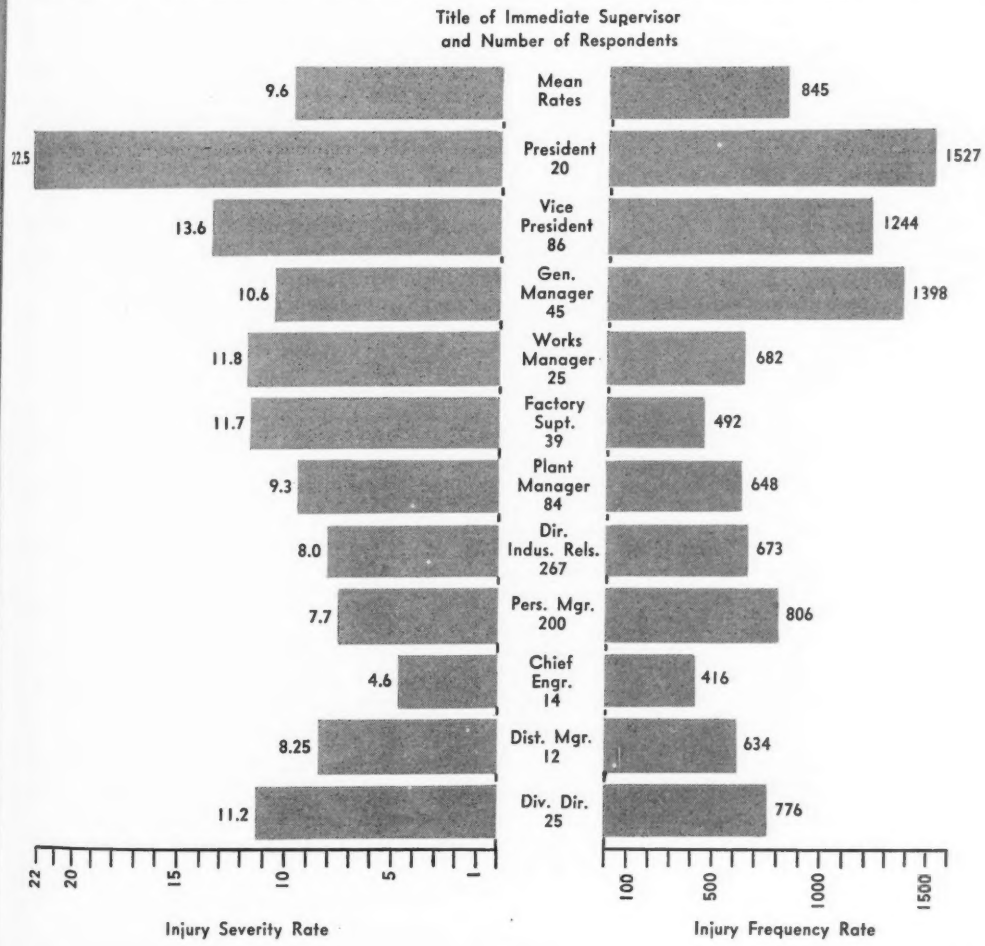
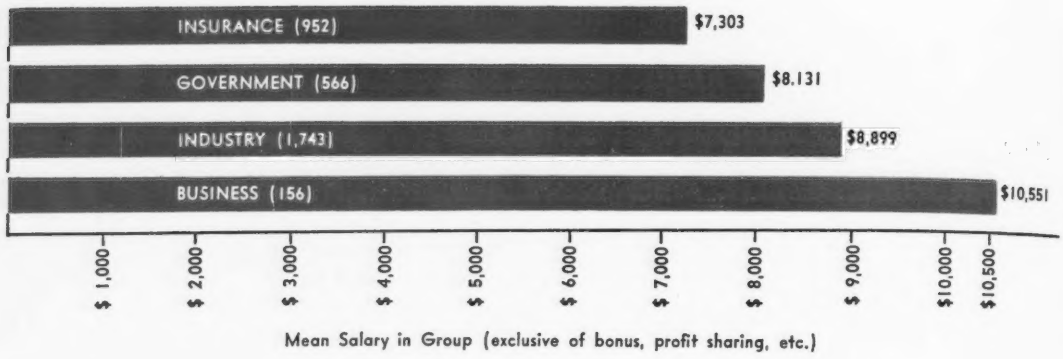


Figure 11 — Mean Annual Salaries by Employer Group

ALL TITLES, 3,417 REPLIES



MEAN ANNUAL SALARIES BY EMPLOYER GROUP

Figure 11 shows a considerable spread between the mean salary for insurance respondents and that for respondents in the business group. The amounts shown do not include bonuses, overtime payments or other benefits furnished in addition to salary. For example, in the case of many members in the insurance group, an automobile is furnished and its personal use is permitted, in some cases for a small charge well below the actual mileage cost.

Since replies were in the form of salary brackets rather than exact salaries, the exact midpoint or median salary cannot be given. A median salary bracket can be obtained, of course, but any such figure would be approximate only.

Since the survey information is dated July, 1958, the figures shown in Figure 11 need to be adjusted upward in view of the steadily increasing level of wages and salaries. Reports of the Bureau of Labor Statistics, U.S. Department of Labor, show that, in the two years since the Society data was collected, the average weekly earnings of hourly-paid production workers in manufacturing industries has increased by 6.5 per cent. While comparable data is not available for professional and technical personnel in industry, it seems probable that salaries for these employes have gone up by a similar percentage.

Information is available on mean salaries paid in particular industries, broken down by company size. For lack of space, this and other information is not published in this report but may be obtained upon request to Society headquarters.

Figure 12—Salaries by Membership Classification

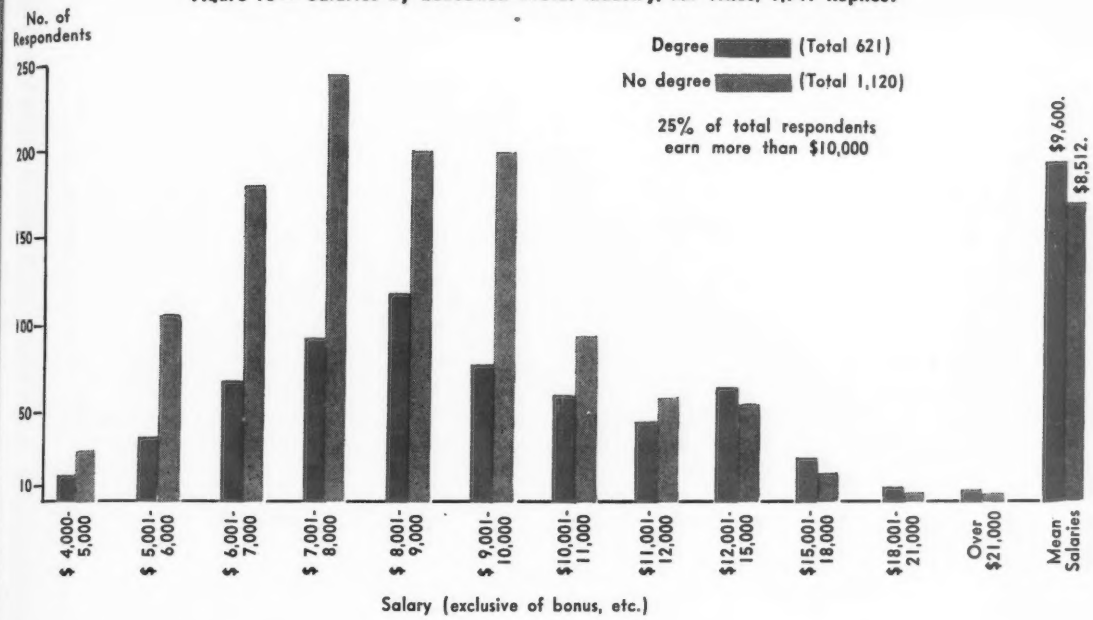
MEMBER CLASSIFICATION		$4,000-5,000	$5,001-6,000	$6,001-7,000	$7,001-8,000	$8,001-9,000	$9,001-10,000	$10,001-11,000	$11,001-12,000	$12,001-15,000	$15,001-18,000	$18,001-21,000	Over $21,000	Total No.	Mean Salary
Member	No.	42	149	270	352	308	266	168	138	143	48	17	24	1925	$9,071
	%	2.2%	7.8%	14.0%	18.3%	16.0%	13.8%	8.7%	7.2%	7.4%	2.5%	.9%	1.2%	100%	
Associate Member	No.	49	141	213	179	143	82	48	30	28	8	1	6	928	$7,782
	%	5.3%	15.2%	23.0%	19.3%	15.4%	8.8%	5.1%	3.2%	3.0%	.8%	.01%	.7%	100%	
Junior Member	No.	55	136	119	88	64	23	10	7	4	3	1	0	510	$7,059
	%	10.8%	26.7%	23.3%	17.3%	12.5%	4.5%	2.0%	1.4%	.7%	.6%	.2%		100%	
TOTAL		146	426	602	619	515	371	226	175	175	59	19	30	3363	

SALARIES BY MEMBERSHIP CLASSIFICATION

Figure 12 shows, as expected, that salaries are bigger for members in the higher membership classification. Condensing some of the data, it is learned that salaries above $10,000 are earned by 27.9 per cent of Member respondents, 13.0 per cent of the Associate Members and 4.9 per cent of the Junior Members.

The 1953 survey showed that the mean salaries of Members, Associate Members and Junior Members in 1951 was, respectively, $7,900, $5,800 and $5,150. As explained above, no median figures were obtained for the present survey. However, the mean salaries for these three groups are $9,071, $7,782 and $7,059, respectively.

Figure 13 — Salaries by Education (Total Industry, All Titles, 1,741 Replies)



SALARIES BY EDUCATION

Figure 13 shows the number of industry respondents earning salaries within the brackets shown. Respondents are separated according to whether or not a degree is held. Slightly over one-third are degree-holders. For discussion of type of degree, see Figure 24. Note that the mean salary for degree-holders is $1,112 higher.

Lack of a degree, however, is no bar to reaching the highest salaries. Nevertheless, as shown in Figure 14, the probability of obtaining the higher salaries is appreciably better for respondents having a degree. For example, Figure 14 shows that only 20.5 per cent of the non-degree respondents earned salaries above $10,000, while 33.5 per cent of the degree-holders earned such salaries.

Figure 14 — Salaries by Education (Per Cent Industry, All Titles, 1,741 Replies)

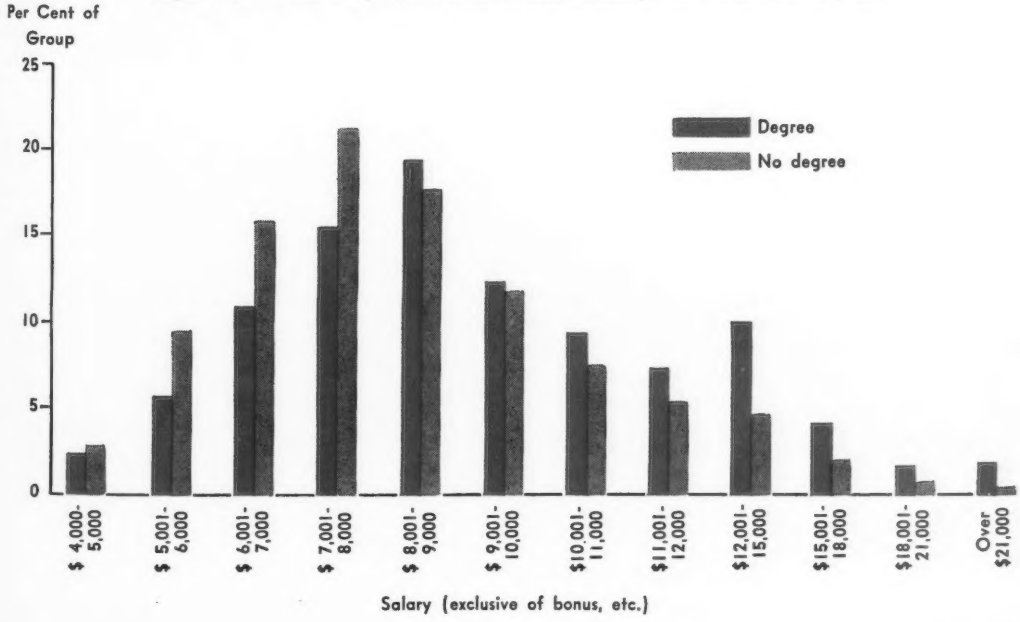
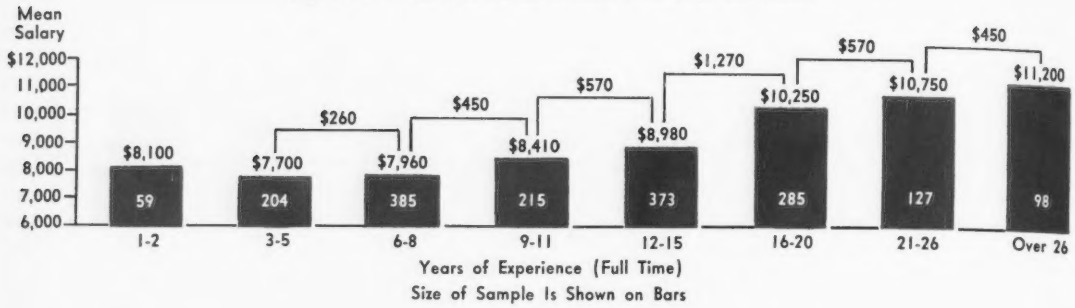


Figure 15 — Salaries by Experience (Industry, All Titles)

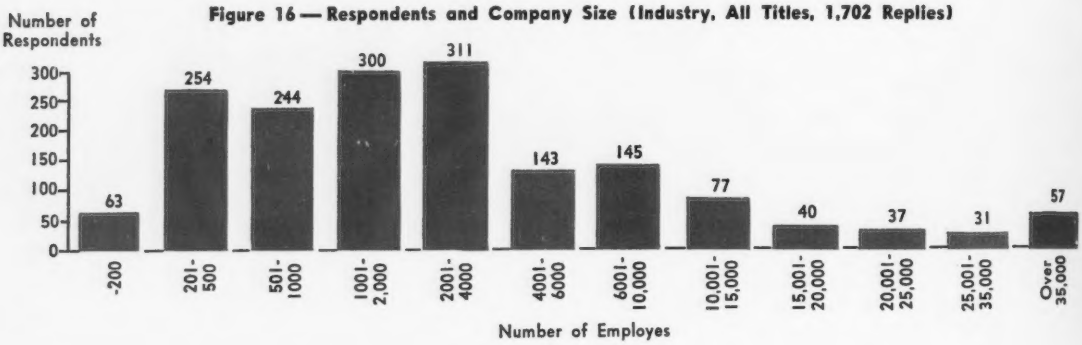


SALARIES BY EXPERIENCE

As anticipated, salary increases with experience. See Figure 15. The difference between adjoining experience brackets increases progressively with experience up to and including 20 years. Thereafter the mean salary increase diminishes in size.

Note that among respondents having one to two years' experience, the mean salary was higher than those in the next two brackets. The reason is not known. One possibility is that some members have been transferred to safety positions only recently after holding jobs at high rates of pay. This opinion is substantiated by data showing that nine members with only one to two years' experience earn from $10,000 to over $21,000.

Figure 16 — Respondents and Company Size (Industry, All Titles, 1,702 Replies)



RESPONDENTS AND COMPANY SIZE

Figure 16 shows that 33 per cent of the respondents in industry who answered this question work for companies having 1,000 or fewer employes. Sixty-nine per cent of the respondents work for companies having 4,000 or fewer employes. Only 14 per cent of the respondents work for companies having more than 10,000 employes.

Comparison with salaries reported shows that, in general, salaries increase with the number of employes. There are, of course, exceptions since factors other than size of company—for example, complexity and magnitude of the accident problem—may be the most significant factors.

SALARIES OF SUPERVISORS

Figure 17 shows that, for salaries in the $7,001-8,000 bracket, those replying are fairly evenly divided as supervisors and non-supervisors. From this point on, the proportion receiving higher salaries increasingly are supervisors. At $12,001-15,000 only 7.8 per cent are non-supervisors, while 92.2 per cent are supervisors. A reverse trend begins at this point. The reason for this odd change cannot be learned without more detailed study of the cases reporting.

Figure 17—Salaries, Supervisor vs. Non-Supervisor (Industry, All Titles, 1,242 Replies)

Salary	No. and % of Total in Salary Bracket			
	Non-Supvr. (478)		Supvr. (764)	
	No.	%	No.	%
$ 4,000- 5,000	16	66.7	8	33.3
$ 5,001- 6,000	58	75.4	19	24.6
$ 6,001- 7,000	82	55.0	67	45.0
$ 7,001- 8,000	115	48.5	122	51.5
$ 8,001- 9,000	86	35.0	159	65.0
$ 9,001-10,000	49	28.5	117	71.5
$10,001-11,000	31	27.0	84	73.0
$11,001-12,000	15	13.7	69	86.3
$12,001-15,000	16	7.8	76	92.2
$15,001-18,000	4	12.5	28	87.5
$18,001-21,000	3	27.3	8	72.7
Over $21,000	3	30.0	7	70.0

Figure 18—Number of Activities Engaged in by Respondents*

Number of Respondents	Number of Activities in Addition to Accident Prevention								Accident Prevention Only
	1	2	3	4	5	6	7+	Total	
Industry	223	291	236	191	120	65	24	1,150	360
Business	10	10	7	5	2	2	0	36	53
Government	96	80	50	21	25	8	8	288	209
TOTAL	329	381	293	217	147	75	32	1,474	622

*Safety titles only.

Figure 19—Respondents* and Time in Activities in Addition to Accident Prevention

% of Time	No. in Government	No. in Business	No. in Industry	Total
1-10	91	4	218	313
11-20	70	10	208	288
21-30	40	9	162	211
31-40	15	3	150	168
41-50	26	8	167	201
51-60	11	0	82	93
61-70	3	0	36	39
71-80	4	0	33	37
81-90	7	2	26	35
91-99	21	0	68	89
TOTAL	288	36	1,150	1,474

*Safety titles only.

Figure 20—Respondents* Engaged in One Other Activity Only

GOVERNMENT							BUSINESS							INDUSTRIAL							TOTAL	
Fire	Security	Personnel	Insurance	Plant Publications	Medical	All Others	Fire	Security	Personnel	Insurance	Plant Publications	Medical	All Others	Fire	Security	Personnel	Insurance	Plant Publications	Medical	All Others	No.	%
45		1	7	3	2		1							49	4	6	17	1	10		146	45.8
14		2	3				3					1		26	2	3	11		2		67	21.1
6			2				1	1						14		3	1	2	1		31	9.7
										1				8		2	2		1		14	4.3
3		1	1				1			1				19	1	3	1	1	1		33	10.3
														2		3	2		2		9	2.8
1														1				1			3	.9
																3	3				6	1.9
																1					1	.4
2	1		1	1										3					1		9	2.8
71	1	4	14	4	2	0	6	1	0	2	0	1	0	122	7	24	37	5	18	0	319	100
96							10							213								

ACTIVITIES OF RESPONDENTS

In view of the wide variety of titles of respondents, a study of activities is revealing. The information which follows was obtained in response to the following question in the survey questionnaire: *Check below the activities which you handle in addition to accident prevention, and approximate per cent of time spent on each:*

1. Fire prevention, fire protection, fire fighting.
2. Plant security supervision.
3. Personnel, labor relations.
4. Group insurance, compensation insurance.
5. Plant publication supervision.
6. Medical.
7. Other.

All of the data obtained on the matter of additional activity were confined to respondents having safety titles.

Figure 18 shows that 1,474 respondents engage in one or more activities in addition to accident prevention work. Only 622 perform accident prevention work exclusively.

Of the industry repliers furnishing data on this subject, only 23.8 per cent are engaged exclusively in accident prevention work. On the other hand, 44 per cent of the government respondents do accident prevention work only.

Figure 19 shows that 80 per cent of the 1,474 devote half or less of their time to such additional activities.

In the business and government groups a higher percentage than in the industry group spend half or less of work time in additional activities.

For those respondents who have only one activity in addition to accident prevention, Figure 20 shows how much time is spent in each of the seven categories of additional activities. The "one other" activity referred to is listed. For approximately two-thirds of the respondents in this table, fire prevention is the only other activity in addition to accident prevention. For approximately one-half of all the respondents in this table, the additional activity consumes 10 per cent or less time.

Figure 21—Time in Two or More Activities* in Addition to Accident Prevention

% of Time	INDUSTRY								BUSINESS								GOVERNMENT								TOTAL	
	No. of Activities						Total	%	No. of Activities						Total	%	No. of Activities						Total	%	No.	%
	2	3	4	5	6	7+			2	3	4	5	6	7+			2	3	4	5	6	7+				
1-10	76	28	12	4	1		121	13.0	3						3	11.5	23	8	4			1	36	18.7	160	13
11-20	70	45	34	11	4		164	17.6	3	3					6	23.0	23	19	5	2	1		50	26.0	220	19
21-30	43	44	27	19	3	5	141	15.2	2		2	1	2		7	26.9	12	6	2	10	1	1	32	16.6	180	16
31-40	33	43	31	18	11	1	137	14.7	1	1					2	7.6	6	4	2	3			15	7.8	154	13
41-50	43	36	28	21	8	5	141	15.2	1	2	2	1			6	23.0	4	6	2	3	3	1	19	9.8	166	14
51-60	15	19	14	13	9	3	73	7.8									2	3	3	1	1	1	11	5.7	84	7
61-70	3	7	5	9	8	2	34	3.6											1			1	2	1.0	36	3
71-80	1	2	8	9	4	3	27	2.9									1	1		1		1	4	2.0	31	2
81-90	3	4	9	2	5	2	25	2.6		1	1				2	7.6	2		1	4		2	9	4.6	36	3
91-99	4	8	23	14	12	3	64	6.9									7	3	1	1	2		14	7.2	78	6
SUB TOTALS	291	236	191	120	65	24	927		10	7	5	2	2	0	26		80	50	21	25	8	8	192		1145	100
GRAND TOTALS	927								26								192									

*Kind of activity is not shown. Safety titles only.

TWO OR MORE ACTIVITIES

A similar tabulation was prepared for respondents engaged in two or more activities in addition to accident prevention. See Figure 21. Scrutiny of this table reveals an astonishingly large number of respondents engaged in from two to seven additional activities consuming nearly 50 per cent of their time. A study of possible correlation between multiple activities and injury rates might be of interest.

Figure 22—Registration as Professional Engineers (by Employer Group)

	INDUSTRY	BUSINESS	GOVERNMENT	INSURANCE	TOTAL
Number Registered	93	12	47	82	234
Per Cent of Employer Group Registered	5.1%	7.0%	8.1%	8.5%	6.6%
Total in Group	1800	170	576	967	3513

REGISTRATION AS PROFESSIONAL ENGINEERS

Figure 22 shows the distribution of respondents who are registered as professional engineers, according to their employer group.

Registered respondents in the insurance group exceed those in all other groups in terms of per cent of employer group.

Registered as professional engineers are 6.6 per cent of all respondents. Affiliates and Life Members are excepted in this as in all other tables.

Figure 23 lists the states in which respondents are registered as professional engineers.

At the time this information was supplied by respondents, two states—Georgia and Connecticut— provided for registration of safety engineers. In other states, their registration was required as industrial engineer, etc. A third state—Massachusetts—has since adopted legislation permitting registration of safety engineers as such.

Figure 23—State of Registration of Professional Engineers (All Respondents)

1. Arkansas	2	20. Montana	1
2. California	26	21. Nebraska	1
3. Colorado	9	22. New Hampshire	1
4. Connecticut	9	23. New Jersey	10
5. Delaware	2	24. New Mexico	7
6. District of Columbia	6	25. New York	15
7. Florida	4	26. North Carolina	3
8. Georgia	6	27. Ohio	10
9. Illinois	17	28. Oklahoma	1
10. Indiana	3	29. Oregon	2
11. Iowa	2	30. Pennsylvania	18
12. Kansas	3	31. Tennessee	2
13. Kentucky	3	32. Texas	22
14. Louisiana	5	33. Vermont	1
15. Massachusetts	4	34. Washington	5
16. Michigan	2	35. West Virginia	2
17. Minnesota	2	36. Wisconsin	6
18. Mississippi	1	Not stated, etc.	14
19. Missouri	7		234

Figure 24—Types of Degrees by Employer Group (All Titles)

EMPLOYER GROUP	ENGINEERING		PHYSICAL SCIENCES		OTHER SCIENCES		OTHER		TOTAL	
	Advanced	Bachelor	Advanced	Bachelor	Advanced	Bachelor	Advanced	Bachelor	Advanced	Bachelor
Industry	23	300	9	69		43	22	194	54	606
Insurance	9	287	2	27		8	10	102	21	424
Government	12	106	1	25		3	4	48	17	182
Business	9	31	2	10	1	1	6	30	18	72
TOTAL	53	724	14	131	1	55	42	374	110	1284

NOTES—In a total of 47 different degree designations, 20 were in the engineering fields.

PHYSICAL SCIENCES—Chemistry, Physics, Mathematics, Geology

OTHER SCIENCES—Biology, Psychology, Agriculture

OTHER—All other degrees, principally Business and Personnel Administration, Economics, Education, Management, Law

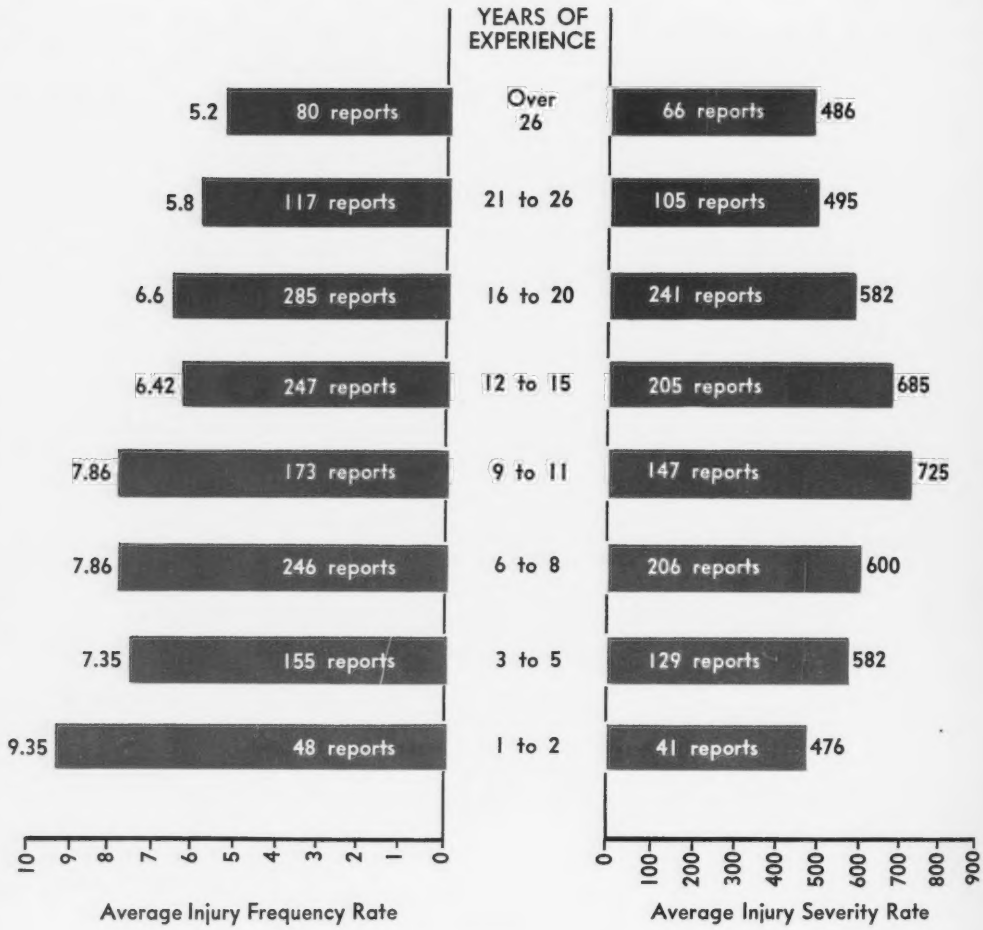
The total number having degrees obviously cannot be obtained by totaling bachelor and advanced degrees. For the industry group, 621 of the 1,741 respondents who answered this question held a total of 660 degrees.

DEGREES HELD BY RESPONDENTS

Figure 24 shows the number of bachelor and advanced degrees held by all respondents, classified in four broad categories. Degrees in 49 fields are shown; 724 hold bachelor degrees in the enginering field and constitute 56 per cent of all those holding bachelor degrees. Of the industry group, 36 per cent hold one or more degrees.

Sixty-one per cent of the degrees held by industry members are in the engineering-scientific field. The remainder are in the fields of business administration, education, psychology, etc.

Figure 25 — Experience and Injury Rate



Combined industry, government and business groups. The number of reports does not agree because all respondents did not give both frequency and severity.

EXPERIENCE OF RESPONDENTS AND INJURY RATES

Figure 25 may be compared with the Chart 12 of the 1953 survey. In both surveys it appears that a definite relationship exists between years of experience and the injury rates. For example, in the present survey, Figure 25 shows that the average frequency rate for the 80 respondents who claimed over 26 years' experience was slightly less than half of the frequency rate of those having only one to two years' experience. The frequency rates shown in this table are strikingly similar to those shown in the 1953 survey.

In the present survey equally good correlation was not found between the severity rate and experience. This is not surprising, since the chance factor plays a large part in the severity of injuries.

OTHER DATA

Considerable other data were developed by the survey, much of it of only local interest. Space does not permit publication of all data in this issue of the *Journal*. Members with questions not answered above are requested to send inquiries to the Society's managing director. Whenever the information is available and the question is of substantial interest, an attempt will be made to publish the answer in future issues.

It is intended to conduct a similar survey at least every five years. Suggestions for improving the survey questionnaire and other constructive criticisms are welcome.

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SURVEY OF PRESENT STATUS OF MEMBERS OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS

All members are asked to complete and return this form promptly to National Headquarters.

1. MEMBERSHIP IN THE SOCIETY.

a. Present classification: *(Check one of the brackets below.)*
( ) Member ( ) Affiliate Member
( ) Associate Member ( ) Life Member
( ) Junior Member

b. Member of what chapter(s):_____

c. If not a member of a chapter, indicate state of residence:_____

2. BUSINESS, INDUSTRY OR GOVERNMENT AFFILIATION.

a. I am connected with the following industry:_____
(Aircraft Manufacturing, Petroleum, Telephone, etc.)

b. I am connected with the following business:_____
(Casualty Insurance, Safety Equipment, Safety Consultant, etc.)

c. I am connected with the following governmental group: *(Check one.)*
( ) Army ( ) Other Federal Group
( ) Navy ( ) State Governmental Group
( ) Air Force ( ) Municipal Governmental Group

d. My responsibility is exercised in: *(Check one.)*
( ) A single plant, single location or single service group
( ) A number of plants in a single city, several cities or multi-service groups

e. The total number of employes in "d" above who are served by my safety work:
( ) Under 200 ( ) 2001-4000 ( ) 15,001-20,000
( ) 201-500 ( ) 4001-6000 ( ) 20,001-25,000
( ) 501-1000 ( ) 6001-10,000 ( ) 25,001-35,000
( ) 1001-2000 ( ) 10,001-15,000 ( ) Over 35,001

3. MY JOB TITLE IS. *(Check one.)*

( ) Superintendent of Safety or Accident Prevention ( ) Asst. Superintendent
( ) Manager of Safety or Accident Prevention ( ) Asst. Manager
( ) Director of Safety or Accident Prevention ( ) Asst. Director
( ) Supervisor of Safety or Accident Prevention ( ) Asst. Supervisor
( ) Safety Engineer ( ) Asst. Safety Engineer
( ) Safety Inspector ( ) Asst. Safety Inspector
( ) Safety Counselor or Consultant ( ) Asst. Safety Counselor
( ) Other_____ ( ) Asst._____

4. MY POSITION IN OUR ORGANIZATION.

Titles of those above me in chain of command. *(Omit this question if you are a safety engineer for an Insurance Company, Department of Labor, Safety Council or similar organization.)*

	EXAMPLE
1_____	President
2_____	Plant Manager
3_____	Director, Industrial Relations
4_____	Me
5_____	
6_____	

5. FUNCTIONS AND DUTIES.

a. Number of full time safety employes whom I supervise *directly*—
(1) Safety Engineers and Safety Inspectors:_____
(2) Secretarial and clerical, etc.:_____

b. Number of full time safety employes to whom I give technical advice, but who report directly to a line supervisor:_____

c. Activities which I handle in addition to accident prevention, and approximate per cent of my time spent on each: *(Check brackets and fill in percentage for as many items as apply to you.)*
( ) Fire prevention, fire protection, fire fighting _____%
( ) Plant security supervision _____%
( ) Personnel, labor relations _____%
( ) Group insurance, compensation insurance _____%
( ) Plant publication supervision _____%
( ) Medical _____%
( ) Other_____ _____%

6. EXPERIENCE AND PROFESSIONAL STATUS.

a. Age: *(Check one.)*
( ) 20-25 ( ) 31-35 ( ) 41-45 ( ) 51-55 ( ) 61-65
( ) 26-30 ( ) 36-40 ( ) 46-50 ( ) 56-60 ( ) 66 and over

b. Years engaged in safety work full time: *(Check one.)*
( ) 1-2 years ( ) 6-8 years ( ) 12-15 years ( ) 21-26 years
( ) 3-5 years ( ) 9-11 years ( ) 16-20 years ( ) Over 26 years

c. Years engaged in safety work part time: *(Check one.)*
( ) 1-2 years ( ) 6-8 years ( ) 12-15 years ( ) 21-26 years
( ) 3-5 years ( ) 9-11 years ( ) 16-20 years ( ) Over 26 years

d. Years engaged in supervising other safety engineers: *(Check one.)*
( ) 1-2 years ( ) 6-8 years ( ) 12-15 years ( ) 21-26 years
( ) 3-5 years ( ) 9-11 years ( ) 16-20 years ( ) Over 26 years

e. If you are a registered Professional Engineer, give principal state you are registered in:_____

f. Membership in other engineering or professional societies: *(Check brackets for as many items as apply to you.)*
( ) ASCE ( ) AIEE ( ) SAME ( ) AIHA
( ) AIMMPE ( ) AICHE ( ) AAAS ( ) ITE
( ) ASME ( ) NSPE ( ) ASTD ( ) Other_____

7. EDUCATIONAL BACKGROUND.

a. Number of years completed in—
Elementary school:_____ College:_____
High school:_____ Graduate school:_____

b. Indicate degrees received:_____

c. Major field:_____

d. Semester (or quarter) hours undergraduate credit earned *after* bachelor's degree:_____

e. Semester (or quarter) hours of graduate credit earned toward advanced degrees:_____

f. Classroom hours of noncredit courses (Institutes, etc.):_____

8. ANNUAL SALARY.

Annual salary exclusive of bonuses, reimbursed expenses, etc.: *(Check one.)*
( ) 4000-5000 ( ) 7001-8000 ( ) 10,001-11,000 ( ) 15,001-18,000
( ) 5001-6000 ( ) 8001-9000 ( ) 11,001-12,000 ( ) 18,001-21,000
( ) 6001-7000 ( ) 9001-10,000 ( ) 12,001-15,000 ( ) Over 21,000

9. MY COMPANY'S DISABLING INJURY EXPERIENCE.

Disabling injury experience computed according to ASA Standard Z16.1-1954. *(Omit this question if you are a safety engineer for an Insurance Company, Department of Labor, Safety Council or similar organization.)*

	FOR CALENDAR YEAR 1957	CUMULATIVE RATE FOR LAST 5 YEARS
a. Disabling injury frequency rate:	_____	_____
b. Disabling injury severity rate:	_____	_____
c. Average days lost per disabling injury:	_____	_____

10. MY COMPANY'S MOTOR VEHICLE ACCIDENT EXPERIENCE.

(Omit this question if you are a safety engineer for an Insurance Company, Department of Labor, Safety Council or similar organization.)

a. Number of vehicles:_____

	FOR CALENDAR YEAR 1957	CUMULATIVE RATE FOR LAST 5 YEARS
b. Motor vehicle accident frequency rate: (NSC Fleet Safety Contest Rules)	_____	_____

11. ACTIVITY IN THE AMERICAN SOCIETY OF SAFETY ENGINEERS.

I am serving or have served as: *(Check as many items as apply to you.)*
( ) National officer ( ) Member of a national committee
( ) Chapter officer ( ) Member of a chapter committee

12. ACTIVITY IN OTHER SAFETY GROUPS.

I am serving or have served in: *(Check as many items as apply to you.)*
( ) National Safety Council ( ) Local safety organization
( ) Veterans of Safety ( ) Federal Safety Council work
( ) Regional safety organization ( ) Other safety groups (specify)
( ) Statewide safety organization _____

AMERICAN SOCIETY OF SAFETY ENGINEERS

Membership Information

THE American Society of Safety Engineers has established the following classifications of active membership.

ASSOCIATE MEMBER—To be eligible as Associate Member an applicant shall be at least twenty (20) years of age and

a. Shall have a degree in engineering from a college or university whose curriculum is accredited by the Engineers' Council for Professional Development or shall have legal registration as a professional engineer and, in addition, shall be engaged in safety engineering with at least one (1) year's experience, no time being credited to this one (1) year unless at least fifty (50) per cent of the time was devoted to safety engineering, or shall have supervision over the safety engineering function of his organization; or

b. Shall have a college degree other than that specified in "a" above and, in addition, shall be engaged in safety engineering with at least three (3) years' experience, no time being credited to this three (3) years unless at least fifty (50) per cent of the time each year was devoted to safety engineering; or

c. In lieu of a college degree, shall be engaged in safety engineering with at least five (5) years' experience, no time being credited to this five (5) years unless at least fifty (50) per cent of the time each year was devoted to safety engineering.

MEMBER—To be eligible as a Member an applicant shall be at least thirty (30) years of age, shall have the qualifications required for Associate Membership and also shall have (5) years' experience in addition to that required by and of a type defined in the subsection of the requirements for Associate Member which is applicable to him.

FELLOW—To be eligible as a Fellow, a Member shall be nominated upon the unsolicited recommendation of three (3) other Members, shall be at least forty (40) years of age, shall have been a Member for at least thirteen (13) years, and shall have been engaged in safety engineering for at least twenty (20) years, during at least five (5) years of which he shall have been in responsible charge of the safety engineering function of his organization. In addition, he shall have made an outstanding contribution to the safety engineering profession. Recommendations of candidates for the Fellow classification, along with substantiating data, shall be sent to the Secretary of the Society, who shall submit such recommendations and substantiating data to the Committee on Membership. The Committee on Membership shall report its findings to the Executive Committee for action. Fellows shall be elected by a majority vote of the Executive Committee.

AFFILIATE MEMBER—To be eligible as an Affiliate Member an applicant

a. Shall be at least twenty (20) years of age and shall be engaged in safety engineering with at least one (1) year's experience, no time being credited to this one (1) year unless at least fifty (50) per cent of the time was devoted to safety engineering; he may remain in this classification while qualifying for Associate Member or Member Classification; or

b. Not being engaged in safety engineering, shall be at least twenty-five (25) years of age and shall have pursuits, attainments in accident prevention, or practical experience, extending over a period of at least three (3) years, which shall qualify him to cooperate with members of the Society and to render service to the Society.

for additional information write to

The American Society of Safety Engineers
5 North Wabash Avenue, Suite 1705
Chicago 2, Illinois

(or contact your local chapter)

Our Pre

Safe and
by Will

Yugoslav
by Philip

Appraisa
by John

Abstract

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